1/2 040 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--A METHOD OF FORMING SEVERAL STABLE STATES IN PARAMETRONS BASED ON A THIN MAGNETIC FILM -U-

AUTHOR-(03)-SALANSKIY, N.M., LITVINCHUK, V.I., SHCHERBAKOV, V.M.

COUNTRY OF INFO--USSR

SOURCE--USSR PATENT 263668

REFERENCE--MOSCOW, OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI, NO

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MAGNETIC THIN FILM, PARAMETRON, MAGNETOSTRICTION, ELASTIC STRESS, MECHANICAL VIBRATION, AUTHOR CERTIFICATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0136 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0111330

UNCLASSIFIED

2/2 040 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AA0111330

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS AUTHOR'S CERTIFICATE INTRODUCES A METHOD OF FORMING SEVERAL STABLE STATES IN PARAMETRONS BASED ON A THIN MAGNETIC FILM. THE METHOD DIFFERS BECAUSE TO IMPROVE THE RESISTANCE TO INTERFERENCE, FLEXURAL OSCILLLATIONS OF THE FILM SUBSTRATE SYSTEM ARE INDUCED BY MAGNETOELASTIC INTERACTION, AND THE AMPLITUDE OF THE MAGNETIZING FIELD IS THEN CHANGED TO THE THRESHOLD VALUES OF THE SUBSEQUENT ELASTIC MODES.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--EFFICACY AND MECHANISM OF ACTION OF ANABOLYTIC STEROIDS IN DIABETIC ANGIOPATHIES -U-

AUTHOR-(05)-YEFIMOV, A.S., LIMANSKAYA, G.V., LITVINENKO, A.F., LAPKO, L.I., BODNAR, P.N.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 6, PP 81-85

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIABETES MELLITUS, BLOOD VESSEL, EYE, ADRENAL GLAND, CARBOHYDRATE METABOLISM, LIPID METABOLISM, MINERAL, RETINA, ATHEROSCLEROSIS, HORMONE, PROTEIN, BLOOD SERUM, BLOOD PLASMA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1889 STEP NO--UR/0504/70/042/006/0081/0085

CIRC ACCESSION NO--AP0129245
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 029

CIRC ACCESSION NO--AP0129245

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO EVALUATE THE IMMEDIATE RESULTS OF MONTHLY USE OF NEROBOL (IN THE DOSE OF 10 MG DAILY) IN 106 PATIENTS WITH DIABETES MELLUTUS COMPLICATED IN 49 PATIENTS WITH MACRO AND 42, WITH MICROANGIOPATHIES THE AUTHORS STUDIED IN DYNAMICS THE INDICES OF CLINICAL SYMPTOMATICS, SPHIGMOGRAPHY OF THE LEG VESSELS, OPTHALMOSCOPY OF THE EYE FUNDUS VESSELS, THE FUNCTIONAL CONDITION OF THE ADRENALS AND SOME ASPECTS OF CARBOHYDRATE, FAT AND MINERAL METABOLISM. THE POSITIVE CLINICAL EFFECT WAS OBSERVED IN THE MAJORITY OF PATIENTS (IN 34 OUT OF 39) WITH OBLITERATING ATHEROSCLEROSIS AND ONLY IN 5 OUT OF 42 PATIENTS WITH RETINOPATHY. A FAVOURABLE EFFECT OF NEROBOL ON SOME METABOLIC AND HORMONAL DISORDERS EXPRESSED ITSELF BY A COMPARATIVE INCREASE OF ALBUMIN SHARE IN THE PROTEIN SPECTRUM OF THE BLOOD SERUM, BY INCREASED CONCENTRATION OF INTRACELLULAR POTASSIUM, BY A DROP OF THE 11 OXICORTICOSTEROID LEVEL IN THE BLOOD PLASMA. NO SUBSTANTIAL CHANGES ON THE PART OF THE LIPID METABOLISM WAS MARKED. TEH PRELIMINARY RESULTS PROVE THE EXPEDIENCY OF USING NEROBOL AS A MEANS OF PATHOGENIC TREATMENT OF DIABETIC ANGIOPATHY. FACILITY: KLINICHESKIY OTDEL KIYEVSKOGO INSTITUTA ENDOKRINOLOGII I OBMENA VESHCHESTV.

UNCLASSIFIED

Acc. Nr.: AP0032016 Ref. Code: UR 0475

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 1, pp 72-75

SUMMARY

EFFECT OF COMPLEX TREATMENT ON THE STATE OF THE CARDIO-VASCULAR SYSTEM IN PATIENTS WITH DIABETES MELLITUS

A. S. Yefimov, A. F. Litvinenko and *Yu. P. Koputov* (Kiev)

Electrocardiography, arterial sphygmography, polycardiography, mechanocardiography, capillaroscopy, capillarography, electrothermometry were used in examination of the cardio-vascular system in patients with diabetes mellitus. Such complex examination makes it possible to carry out early diagnosis of mypcardial involvement and angiopathias, even before their clinical manifestations. Functional tests enable to determine the degree of cardio-vascular involvement.

It was found that complex treatment resulted in improvement of the state of the cardio-vascular system in patients with diabetes mellitus only in cases of functional disorders.

The abovementioned instrumental methods of examination are valuable for the control of the efficiency of treatment.

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REEL/FRAME
19700168

1/2 009 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--DETERMINATION OF FLAVOID COMPOUNDS. I. ANALYSIS OF FLAVONOLS OF THE KAEMPFEROL AND QUERCETIN GROUPS IN DIMETHYLFORMAMIDE -U-
AUTHOR-(03)-GEORGIYEVSKIY, V.P., SENNIKOV, G.A., LITVINENKO, A.L.

COUNTRY OF INFO--USSR

SOURCE--FARM. ZH. (KIEV) 1970, 25(1), 79-84

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, KETONE, POTENTIOMETRIC TITRATION, SOLVENT EXTRACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1157 STEP NO--UR/0491/70/025/001/0079/0084

CIRC ACCESSION NO--AP0130105
UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0130185

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING PROCEDURE WAS DEVELOPED FOR THE POTENTIOMETRIC DETN. OF KAEMPFEROL, KAEMPFEROL 3 RHAMNOSIDE, QUERCETIN 3 ARABINOSIDE, QUERCETRIN, RUTIN, ROBININ, KAEMPFEROL 3,7 DIRHAMNOSIDE (I), QUERCETIN 3 RHAMNOSIDE, QUERCETIN 3 GALACTOSIDE, AND DIHYDROQUERCETIN: DISSOLVE A SAMPLE (SIMILAR TO 0.02 OR SIMILAR TO 0.03 G FOR AGLYCONS AND GLYCOSIDES, RESP.) IN 30 ML HCONME SUB2, NEUTRALIZE THE SOLN. IMMEDIATELY BEFORE TITRN. WITH 0.05N ET SUB4 NOH IN C SUB6 H SUB6 MEOH (4:1), AND TITRATE WITH THIS REAGENT IN A SYSTEM COMPRISING A GLASS ELECTRODE AND SCE. THE CONTENT OF AGLYCONS WAS ASSESSED FROM THE 3RD POTENTIAL JUMP, THAT OF MONOSIDES, RUTIN, AND ROBININ FROM THE 2ND, AND THAT OF I FROM THE 1ST. THE ERROR OF THE DETN. WAS PLUS OR MINUS 1-3PERCENT. THE FLAVONOIDS BEHAVE IN HCONME SUB2 MEDIUM AS ACIDS OF DIFF NT STRENGTH AND BASICITY.

FACILITY: KHARKOV SCI.-RES. CHEM.-PHARM. INST., KHARKOV, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--COLOR REACTIONS TO LEMORAN AND BAMETHAN SULFATE -U-

AUTHOR-(02)-LITVINENKO, A.V., BERNSHTEYN, V.N.

COUNTRY OF INFO--USSR

SOURCE--KHIM.-FARM. ZH. 1970, 4(1), 53-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TARTARIC ACID, ALKALOID, MORPHINE, SULFATE, HYDROXYL RADICAL, COLORIMETRIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0053 STEP NO--UR/0450/70/004/001/0053/0054

CIRC ACCESSION NO--AP0132348

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0132348
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD FOR THE DETN. OF THE TWO TITLE COMPDS. IN SOLN. WAS AS FOLLOWS: TO A ML OF AN AQ. SOLN. CONTG. 2-3 MG LEMORAN (THE TARTRATE SALT OF (MINUS),3,HYDROXY,N,METHYLMORPHINAN) OR 10 MG BAMETHAN SULFATE (1,RHO,HYDROXYPHENYL,2,BUTYLAMINOETHANOL SULFATE) WAS ADDED A ML OF 0.15PERCENT ALC. SOLN. OF 1,NITROSO,2,NAPHTHOL, 1 DROP AQ. NANO SUB2 SOLN. AND A LO OF CONCD. HNO SUB 3. A COLOR CHANGE OCCURRED. LEMORAN GIVES LIGHT COLOR (LAMBDA SUBMAX. 500-15MMU) AND BAMETHAN SULFATE A DARK COLOR (LAMBDA SUBMAX. 480-5 MMU). TO THE LATTER SOLN. WAS ADDED 3 ML H SUB2 O AND 3 ML CHCL SUB3. ON SHAKING, THE CHCL SUB3 BECOMES RED. LEMORAN CAN BE DETECTED IN CONCNS. AS LOW AS 15 GAMMA AND BAMETHAN SULFATE IN CONCNS. 180 GAMMA. FACILITY: PYATIGORSK. FARM. INST., PYATIGORSK, USSR.

UNCLASSIFIED

USSR

UDC 669.14'24'26:621.17

POPOVA, L. V., LITVINENKO, D. A., NIKITIN, V. N., and GEORGIYEV, M. N., Central Scientific Research Institute of Ferrous Metallurgy

"Resistance of Low-Alloy Ni-Cr Steel to Crack Development"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 74, pp 60-62

Abstract: The effect of nickel and chromium in low-alloy normalized steel on resistance to crack development under impact loading was investigated where the nickel and chromium were not alloyed together in the same steel samples. The steel investigated contained (in %): 0.2 C, 0.2 Si, a.2 Mn and nickel contents of 0.59, 0.93, 1.80, and 2.40, and chromium contents of 0.30, 0.66, 1.40, and 2.20. Better combinations of strength and ductility properties were observed when Ni and Cr contents are less than 1%. Impact strengths were also better at the lower alloying contents, and the amount of ferrite and prelite was almost the same for these alloying component contents. As a result of the better ductility and lower tendency toward crack development for Ni contents of 0.6-0.8% and Cr contents of 0.5-0.7%, these steels are suitable for use under conditions of impact loads at positive temperatures, and of the two types of

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APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002201820002-4"

USSR

POPOVA, L. V., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 74, pp 60-62

steels, low-alloy chromium steel is recommended for use inasmuch as it is not as scarce as nickel. Four figures, one table, ten bibliographic references.

2/2

USSR

UDC 669.14.018.29

GLADSHTEYN, L. I., BOBYLEVA, L. A., and LITVINENKO, D. A., Central Scientific Research and Planning Institute of Steel Construction and Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Increase of Cold Resistance of High-Strength Structural Steel"

Moscow, Stal', No 6, Jun 73, pp 541-546

Abstract: The effect of moderate additions (up to 1.6%) of nickel to high-strength 12G2MF steel (without boron) and to the C-Mn-V system with boron was investigated with a view to increase the cold resistance on experimental melt of 17-kg ingots from induction-arc furnace rolled to 20-mm sheets. Small additions of Ni(0.5-1.0%) somewhat raised the resistance to brittle failure of C-Mn-V-B system steel, but a further increase did not give positive results; at ~ 2.5% Ni content, the cold resistance of C-Mn-V-B type steel lowered, and a rise of tempering temperature up to 690°C did not result in any improvement. Effects of the hardening temperature, the welding method, and of the grain size on mechanical properties and the sectional distribution of hardness were investigated. Thirteen figures, two tables, eleven bibliographic references.
1/1

USSR

UDC 669.14.018.292

NIKITIN, V. N., LITVINENKO, D. A., D'YAKONOVA, V. S., SHIFRINA, N. P., and SLAVOVA, A. I., Central Scientific Research Institute of Ferrous Metallurgy and the Cherepovets Metallurgical Plant

"Investigation of Steel 23KhG2AFR with a Minimum Yield Strength of 50 kgf/mm^2"

Moscow, Stal', No 7, Jul 73, pp 647-649

Abstract: Steel 23KhG2AFR was developed on the basis of steel 16G2AF with a guaranteed yield strength of 45 kgf/mm^2. This steel was tested without boron (A) and with 0.0027% boron (B) and having the following chemical composition (in %):

	C	Mn	Si	Cr	V	N	B	P
A	0.20	1.40	0.43	0.66	0.086	0.011	0.029	0.024
B	0.17	1.50	0.53	0.50	0.095	0.015	0.020	0.019

In steel 23KhG2AFR the boron is bonded in the carbonitride with a crystal lattice of the type $B(CN)_{0.35}$ or B(CN). Boron, bonding the nitrogen and carbon, evidently refines the grain boundary zones of impurities which previously

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USSR

NIKITIN, V. N., et al., Stal', No 7, Jul 73, pp 647---649

influencex the increase of ductility and impact strength of the steel. After an optimum heat treatment -- normalization at 910°C and tempering at 700°C -- steel 23KhG2AFR had the following mechanical properties in 4-mm thick sheet: yield strength -- 50 kgf/mm^2 (min), tensile strength -- 70 kgf/mm^2 (min), elongation -- 18% (min), and impact strength -- 4.0 kgf-m/cm^2 (min) at -40°C. Steel 23KhG2AFR is sensitive to notching under static and dynamic loads and is characterized by good engineering properties. This steel can be satisfactorily welded with the weld joint having the same strength as the base metal. Four figures, one bibliographic reference.

2/2

USSR UDC 669.14:539.2:546.26

ZENSKIY, S. V., LITVINENKO, D. A., GRIGORKIN, V. I., and KHARCHIKOVA, T. V., Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin and Lipetsk Affiliate of the Moscow Institute of Steel and Alloys

"Diffusion of Carbon in Alpha-Iron and Steels 17GS and 18KhNVA Containing Carbides"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy--Chernaya Metallurgiya, No 6, Jun 73, pp 93-96

Abstract: A method was developed for calculating the diffusion coefficients of carbon in alpha-iron and steels containing a carbide phase in the case of an "instantaneous" source of the substance being diffused onto the sample surface. The coefficients of diffusion of carbon in armco-iron and 17GS and 18KhNVA steels were determined and the temperature relationship of the diffusion coefficients was found. From the expressions derived for diffusion coefficients it was evident that the combined alloying of ferrite with Mn and Si (17 GS steel) and with Cr, W, and Ni (18KhNVA) leads to a lowering of the diffusion coefficient magnitude and to an increased activation energy of this process. Thus, at 500°C the diffusion coefficients for carbon in 17GS steel are 100 times less, and in steel 18KhNVA, 1000 times less than in armco iron. 3 figures, 7 bibliographic references.
1/1

USSR UDC 699.018

GLADSHTEYN, L. I., LITVINENKO, D. A.

"High-Strength Structural Steel"

Vysokoprochnaya Stroitel'naya Stal' [English Version Above], Metallurgiya Press, Moscow, 1972, 238 pages.

Translation of Annotation: This book presents the primary mechanical and technological properties of high strength steels designed for the manufacture of welded steel structures, means for production, peculiarities of metallurgical plant production and applications in technology, as well as the physical nature of strength and alloying, reliability in service of low-alloy high-strength steel. In addition to domestic works, an extensive bibliography of foreign studies and practice is presented.

The book is designed for engineering-technical and scientific workers in the metallurgical, construction and machine building industries, and may also be used as a teaching aid for university students. 179 Figures; 61 Tables; 214 Biblio. Refs.

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GLADSHTEYN, L. I., LITVINENKO, D. A., Vysokoprochnaya Stroitel'naya Stal', Metallurgiya Press, Moscow, 1972, 238 pp.

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GLADSHTEYN, L. I., LITVINENKO, D. A., Vysokoprochnaya Stroitel'naya Stal', Metallurgiya Press, Moscow, 1972, 238 pp

3/4

USSR

GLADSHTEYN, L. I., LITVINENKO, D. A., Vysokoprochnaya Stroitel'naya Stal', Metallurgiya Press, Moscow, 1972,238 pp.

4/4

USSR

UDC 539.4.01

GEORGIYEV, M. N., POPOVA, L. V., NIKITIN, V. N., LITVINENKO, D. A., Moscow

"Influence of Titanium on Ductility Properties of Low-Alloy Steel"

Kiev, Problemy Prochnosti, No 5, May, 1971, pp 98-100.

Abstract: The influence of titanium content in low-alloy normalized steel on its ductile properties is studied. It is demonstrated that alloying with 0.025 to 0.16% titanium causes a deterioration in ductile properties, while increasing the titanium content from 0.16 to 0.25% causes a significant increase in impact toughness, primarily by increasing the work of crack formation.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002201820002-4"

USSR

NIKITIN, V. N., LITVINENKO, D. A., STETSENKO, B. A., GLADSHTEYN, L. I., KACHURIN, D. S., and VOROZHISHCHEV, V. I., Central Scientific Institute of Ferrous Metallurgy, Kuznetsk Metallurgical Combine

"Increasing the Ductility and Impact Strength of Carbon Steel"

Moscow, Metallurg, No 8, Aug 71, pp 17-19

Abstract: A basic structural steel for different structures and machines is steel St. 3sp which, according to GOST 380-60 has an impact strength of 3 kg-m/cm^2 at -20°C. Aluminum in the amount of 0.1-0.2% improves its impact strength and increasing Al content to 0.052% does not improve strength properties but leads to an increased ductility of hot-rolled steel from 20-25.7% at 0.0074% Al up to 26-34.0% at 0.052% Al. In studies of steels St. 3 sp and St. 3Yu in sheet form it was found that aluminum improves their impact strength at -40°C, although the thicker the sheet the greater the tendency to cold brittleness. Steel St. 3Yu has a greater impact strength than St. 3sp due to smaller size of ferrite grains. In all instances (for steel St. 3sp) strength properties were better for the normalized state than for the hot-rolled state.

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USSR

UDC 669.14.018.29-414

GOL'DSHTEYN, M. I., BLYUM, E. E., GRIN', A. V., SELETKOV, A. I., LITVINENKO, D. A., LEYKIN, I. M., RUDCHENKO, A. V., OREL, E. I., VAYNTRAUB, S. S., LOKTIONOV, P. Ya., LASHCHEV, V. Ya., MOSIOSHVILI, V. V., MIROSHNICHENKO, S. I., and KONDRASHOV, M. M., Ural Scientific Research Institute of Ferrous Metals, Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin, and Kommunarsk Metallurgical Plant

"Adoption of the Industrial Production of 15G2AF Sheet Steel"

Moscow, Stal', No 9, Sep 70, pp 828-830

Abstract: An investigation of the 15G2AF plate steel (10-25 mm), commercially produced at the Kommunarsk Metallurgical Plant, revealed that alloying of the manganous structural steel with nitrogen and vanadium increases the strength and plasticity properties of the normalized rolled steel. Normalizing of the metal effects a size reduction of the grain (to 10-12), which assures a low (-100°C to -120°C) cold brittleness threshold. The strength of the 15G2AF steel was found to be at least 60 kg/mm^2 and the yield stress at least 45 kg/mm^2. Use of 15G2AF steel for welded structures decreased weight, in comparison with steel 10G2S1, by 13.6%.

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USSR UDC 669.1.017.018.29.001.5

NIKITIN, V. N., LITVINENKO, D. A., POPOVA, L. V., and GEORGIYEV, M. N.

"Influence of Molybdenum on Ductile Properties of Low-Alloy Steel"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 190-192

Translation: The influence of molybdenum on the tendency of low-alloy steel of the same basic composition (0.2% C, 0.2% Si, 1.3% Mn) toward brittle rupture in the normalized state is studied. It is demonstrated that alloying of this steel with molybdenum up to 2.0% causes continuous deterioration of a combination of ductile properties. 1 figure; 1 table; 6 biblio. refs.

1/1

USSR UDC 669.017.1:539.56.001.5

NIKITIN, V. N., LITVINENKO, D. A., and ZADUBROVSKIY, A. I.

"Estimate of Tendency of Steel to Brittle Rupture by Method of Rupture Testing of Specimens With Circular Notch at Liquid Nitrogen Temperature"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 187-190

Translation: A new method is used to estimate the tendency of low-alloy steels to brittle rupture. It is demonstrated that the least cold brittleness is that of steels having the greatest fibrous component in the fracture produced in impact specimens during serial impact toughness tests. The absolute values of impact toughness are of secondary significance. 1 figure; 2 tables.

1/1

USSR

UDC 669.017..1539.6.001.5

NIKITIN, V. N., LITVINENKO, D. A., and KOBYZEV, V. K.

"Low-Alloy Steel With Increased Brittle Rupture Resistance at Low Temperatures"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 197-199

Translation: It is demonstrated that a steel alloyed with 0.07-0.16% Al with addition of titanium has increased resistance to brittle rupture at low temperatures in comparison with low-alloy structural steels.

In the normalized state, the steel had $\sigma_b \geq 510$ Mn/m^2 (51 kg/mm^2; $\sigma_T \geq$ ≥ 370 Mn/m^2 (37 kg/mm^2; $\delta_5 \geq 24\%$ and impact toughness at -60°C $a_H \geq 400$ kj/m^2 (5 kg·m/cm^2).

The steel is strong down to -70°C in the normalized state, and only when rolled to 25 mm thickness is thermal improvement (hardening + high-temperature tempering) required. 4 figures; 3 tables.

1/1

1/2 036 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--THERMALLY IMPROVED STEEL 17G2SF FOR GAS PIPELINE PIPES OF LARGE DIAMETER -U-
AUTHOR--LEYKIN, I.M., LITVINENKO, D.A., MATROSOV, YU.I., SITNOVA, N.V.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (2) 9-12

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALLOY DESIGNATION, LOW ALLOY STEEL, STEEL PIPE, SHEET METAL, IMPACT STRENGTH, METAL CRACKING, CRACK PROPAGATION, METAL AGING, STRAIN/(U)17G2SF LOW ALLOY STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1309 STEP NO--UR/0129/70/000/002/0009/0012

CIRC ACCESSION NO--AP0106086
UNCLASSIFIED

2/2 036 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC-ACCESSION NO--AP0106086

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IMPROVED SHEET STEEL 17G2SF, FOLLOWING ANNEAL AT 500-50DEGREES, RESULTS IN LIMITS OF STRENGTH UP TO 80 KG-MM PRIME2, YIELD 65-70 KG-MM PRIME2 WITH HIGH PLASTICITY, IMPACT STRENGTH ALPHA SUBN PRIME NEGATIVE40 LARGER THAN OR EQUAL TO 10 KG,M-CM PRIME2, ALPHA SUBN PRIME NEGATIVE80 LARGER THAN OR EQUAL TO 8 KG,M-CM PRIME2, AND CRACK DEVELOPMENT FUNCTION SIMILAR TO 2.5 KG,M-CM PRIME2. RAISING THE ANNEALING TEMP. TO 600-30DEGREES INCREASES THE CRACK GROWTH FUNCTION FROM 3.5 KG,M-CM PRIME2 AND PRESERVES THE LIMITS OF STRENGTH LARGER THAN 70 KG-MM PRIME2. STEEL 17G2SF, IN THE THERMALLY IMPROVED CONDITION, HAS LITTLE SUSCEPTIBILITY TO STRAIN AGING. STEEL 17G2SF IS RECOMMENDED FOR THE PRODUCTION OF THERMALLY STRONG PIPES WITH A BREAKING POINT OF 70 KG-MM PRIME2 FOR USE AS GAS LINES IN NORTHERN REGIONS AS WELL AS A QUALITY HIGH STRENGTH STEEL WITH YIELD OF LARGER THAN 50-60 KG-MM PRIME2 FOR USE IN METAL CONSTRUCTION.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--ALLOYING OF STEEL -U-

AUTHOR-(05)-LITVINENKO, D.A., RUDCHENKO, A.V., TORPANOVA, G.A., LEYKIN, I.N., SHUSHLEBIN, B.A.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,637
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL PATENT, ALLOY STEEL, STEEL MANUFACTURING PROCESS, NITRIFICATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1821 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132086

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--20NOV7C
CIRC ACCESSION NO--AA0132086
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STEEL IS ALLOYED WITH N BY POURING
A STREAM OF HOT METAL OVER STABLE METAL NITRIDES.

USSR UDC 669.15-194:18'14.018

LEYKIN, I. M., LITVINENKO, D. A., and URDCHENKO, A. V.

Proizyodstvo i Svoystva Nizkolegirovannykh Staley (Production and Properties of Low-Alloy Steels), Moscow, Izd-vo "Metallurgiya," 1972. 256 pp

Translation of Introduction: For a long time the main structural material for the production of weldments was low-carbon steel (types St. 3, St. 2, etc.), characterized by guaranteed but low strength, high ductility, and good engineering properties, including weldability. The relatively low price of this steel, which does not contain special alloying elements, was also significant. Despite the merits of low-carbon steel, it has a number of shortcomings of which the most important are relatively low strength, low resistance to brittle fracture, and increased sensitivity to mechanical hardening. The last two properties are determined to a significant extent by the degree of metal deoxidation (rimmed, semi-killed, and killed); even the best of these -- killed low-carbon steel -- is characterized by low values of impact strength at minus temperatures, which limits it application in a number of cases. Intensive research in recent years has indicated that with the use of special technological processes (regulated rolling, thermal hardening, etc.) or by introduction of modifiers (niobium, vanadium, etc.) it is possible to noticeably improve the qualitative properties of low-carbon

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steel, including its resistance to brittle fracture. The shortcomings of low-carbon steel can be overcome by changing over to low-alloy steels (steels with increased strength) the increased strength and resistance to brittle failure of which can be achieved by the addition of alloying elements and refinement of structure.

Although the first attempts abroad at the use of low-alloy steels as a structural material were made in the last century (1898), in essence the main development and increase in the production volume of these steels in the modern sense have occurred in the last 15-20 years. In the first stage these steels, used in the unwelded version, were characterized by high carbon content (up to 0.35%) and a relative high percentage of alloying elements (2-3% Ni, 1.25% Si (max), and 1.5% Mn (max). One of the first low-alloy steels was steel F ($\leq$0.25% C, $\leq$1.5% Si, $\leq$1.2% Mn). Modern weldable low-alloy steels of increased strength have been developed in the past 30 years. In this same period of time the use of domestic low-alloy steels for bridge and ship construction (steels 30G, 20G2, etc.) was started, although the broad development of good weldable low-alloy steels has taken place since

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the post-war years (1947). Since this time, the scientific research institutes and metallurgical plants have significantly expanded the assortment of low-alloy steels, mastered the technology of their production, and organized the series supply of rolled products to a wide circle of consumers. These metal-consuming branches of the economy (main pipeline construction, transportation and highway machine-building, automobile manufacturing, commercial construction, etc.) are being rapidly developed. For example, in the past five years more than two million tons of high-strength low-alloy steel has been produced for construction purposes out of a total volume of 20 million tons of metal-construction works. The metallurgical industry is introducing new capacities and technological improvements in all sections of the metallurgical allotment to facilitate production of rolled products with high qualitative indices which exceed the best samples of foreign standards.

The specific weight of low-alloy steel in the overall smelting of steel in our country grows continuously. In 1960 the percentage of low-alloy steel amounted to 5.8%, in 1965 -- 7.6%, and in 1969 -- 9.1%. In the period from

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1955 to 1970 the volume of production of low-alloy steel increased 16.8 times. At the present time the metallurgical industry produces a wide assortment of low-alloy rolled products. The distribution of low-alloy steels produced in the Soviet Union in 1970 is characterized by the following data for rolled products: large grade 7.3%; medium and small grade 45.5% (mainly steel for reinforced concrete); shaped and curved shapes 4.9%; thick sheet 18.2%, thin sheet 0.4%, and strip 23.7%. The distribution as to alloying is as follows: manganese steel 27.95%, structural Si-Mn steels 15.65%, and strip steel 40.9%; Cr-Si-Mn steel 3.55%, Cr-Si-Ni-Cu steel 5.9%, others -- 6.05%.

Manganese and Si-Mn steels make up the main mass of low-alloy steels in our country. This is explained by the existence of large natural resources of raw material for obtaining the corresponding ferroalloys and their relatively low cost.

Thus, the cost of one ton of steel in ingots upon adding 0.1% Mn is increased only 35 kopecks, 0.1% Si -- increased by only 42 kopecks, 0.1% Cr -- by 50

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kopecks, and nickel -- by 3 rubles, 60 kopecks, copper -- by 83 kopecks, vanadium -- 7 rubles, 40 kopecks, niobium -- 21 rubles, and titanium by 2 rubles, 50 kopecks.

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USSR

LEYKIN, I. M., et al., Proizyodstvo i Svoystva Nizkolegirovannykh Staley (Production and Properties of Low-Alloy Steels), Moscow, Izd-vo "Metallurgiya," 1972, 256 pp

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1/2 018 UNCLASSIFIED PROCESSING DATE--19SEP70

TITLE--CONFIGURATION AND REACTIVITY OF SATURATED CYCLIC AND HETEROCYCLIC COMPOUNDS -U-

AUTHOR-(05)-LYUTS, A.YE., AGASHKIN, O.V., ARTYUKHIN, V.I., SOKOLOV, D.V., LITVINENKO, G.S.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM. 1970, 20(1), 74-81

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MASS SPECTRUM, BENZENE DERIVATIVE, QUINOLINE, AMINE, AMIDE, CONJUGATE BOND SYSTEM, ISOMER, IONIZATION POTENTIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/1660 STEP NO--UR/0360/70/020/001/0074/0081

CIRC ACCESSION NO--AP0100264

UNCLASSIFIED

2/2 . 018 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100264

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MASS SPECTRA OF 4 ISOMERS OF 1 BENZOYL, 2 METHYLDECAHYDROQUINOLINE AT IONIZATION VOLTAGES OF 20 AND 70 V WERE OBTAINED. THE DISTRIBUTION OF POS. CHARGE BETWEEN N AND FRAGMENTS CONTG. BENZOYL IS AFFECTED BY THE STRUCTURE AND CONFIGURATION OF THE MOL. IN THE CASE OF ISOLATED BENZOYL AND AMINO GROUPS, POS. IONS CONTG. N PREVAILED. IN THE CASE OF AMIDES, THE POS. CHARGE WAS LOCALIZED IN FRAGMENTS CONTG. C SUB6 H SUB6 AND THE DEGREE OF LOCALIZATION INCREASED WITH INCREASED EFFICIENCY OF CONJUGATION.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--STEREOCHEMISTRY OF NITROGEN HETEROCYCLES. XXIII. ACETIC AND DIPHENYLACETIC ESTERS OF STEREOISOMERS OF

AUTHOR-(04)-KHLUDNEVA, K.I., SOSNOVA, V.V., SOKOLOV, D.V., LITVINENKO, G.S.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM. 1970, 20(2), 43-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--STEREOCHEMISTRY, HETEROCYCLIC NITROGEN COMPOUND, ACETATE, QUINOLINE, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1901 STEP NO--UR/0360/70/020/002/0043/0047

CIRC ACCESSION NO--AP0123685

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123685

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO SYNTHESIZE THE TITLE ESTERS, THE HCL SALT OF EACH OF THE 5 MOST AVAILABLE STEREOISOMERS OF THE TITLE HETEROCYCLE WAS HEATED WITH AC SUB2 O AND ACCL, OR WITH PH SUB2 CHCOCL WITHOUT SOLVENT. THE SINGLE ISOMERS DIFFER IN THE ABSORBABILITY ON AL SUB2 O SUB3, WHICH IS AFFECTED BY THE MUTUAL CONFIGURATION OF THE RINGS AND THE SPATIAL ORIENTATION OF ME AND AC OR DIPHENYLACETYL GROUPS. THE R SUBF VALUES IN AN ELUTION WITH ET SUB2 O ON A THIN AL SUB2 O SUB3 LAYER RANGE FRM 0.09 TO 0.96 AND FROM 0.03 TO 0.85 WITH ACETIC AND DIPHENYLACETIC ESTERS, RESP.; EACH DIPHENYLACETIC ESTER IS ABSORBED MORE STRONGLY THAN THE RESP. ACETIC ESTER. THE POSITIONS AND SHAPES OF SOME ABSORPTION BANDS IN THE IR SPECTRA ARE INFLUENCED BY THE SPATIAL ORIENTATION AND CHARACTER OF THE ACYLOXY GROUP. FACILITY: INST. KHIM. NAUK, ALMA-ATA, USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--PHOTOMETRIC MICRODETERMINATION OF NONPROTEIN NITROGEN -U-

AUTHOR-(03)-SERBINA, G.N., LITVINENKO, G.V., VISHNEYSKAYA, I.G.

COUNTRY OF INFO--USSR

SOURCE--LAB. DELO 1970, (1), 31-2

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--MICROCHEMICAL ANALYSIS, BLOOD SERUM, NITROGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0214 STEP NO--UR/9099/70/000/001/0031/0032

CIRC ACCESSION NO--AP0119210

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119210

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MODIFICATION OF THE HYPOBROMITE METHOD FOR THE MICRODETN. OF NONPROTEIN N IS DESCRIBED. BLOOD SERUM (0.02 ML) IS DEPROTEINIZED WITH 1 ML OF THE PPTG. MIXT. CONTG. TUNGSTIC ACID. AFTER CENTRIFUGATION 1 ML OF THE SUPERNATANT IS MIXED WITH 0.5 ML OF THE HYPOBROMITE SOLN. AFTER 3 MIN 0.5 ML OF 5PERCENT KI AND 0.5 ML OF 1N HCL ARE ADDED. AFTER 10 MIN THE ABSORBANCE IS DETD. AT 400 NM AGAINST H SUB2 O. THIS METHOD WAS USED FOR 20,000 ANALYSES DURING 2 YEARS AND ITS RESULTS AGREE FAVORABLY WITH THE OTHER HYPOBROMITE METHODS. FACILITY: GL. KLIN. VOEN. GOSP. IM. BURDENKO, MOSCOW, USSR.

UNCLASSIFIED

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UDC 621.317.7.029.65/66-5

VERTIN, A. A., PETRUSHIN, A. A., SUSLOV, N. N., SHESTOPALOV, V. P., KOLOSOV, S. S., LEONOV, Yu. I., and LITVINENKO, L. N.

"Automation of Experimental Research in the Millimeter and Submillimeter Wavelength Ranges"

Novosibirsk, V sb. Konf. po avtomatiz. nauch. issled. na osnove primeneniya ETsVM, 1972 (Conference on Automation of Scientific Research Using the Electronic Digital Computer, 1972--collection of works) 1972, pp 100-101 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A515)

Translation: The proposed research method is based on the visualization of the field distribution in open structures (resonators, for example) by introducing into their space a test body which, entering a region of greater or lesser intensity in its motion along a specified trajectory, varies to some extent the parameters of the structures. The trajectory of the test body is traced by a beam on the screen of a cathode-ray tube. The brightness of the beam is proportional to the signal taken from the open structure. A. K.

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USSR

UDC 541.127.128:547.241

LITVINENKO, L. M., TITSKIY, G. D., STEPKO, O. P., and KIRPENKO, N. P., Donetsk Branch of the Physical Organic Chemistry, Institute of Physical Chemistry Imeni L. V. Pisarzhevskiy, Acad. Sc. Ukrainian SSR and Donetsk State University

"Oxygen-Nucleophilic Catalysis of the Organophosphorus Acids With Amides. The Effect of the Structure of the Catalyst and of the Acylated Arylamine on the Catalytic Process"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 8, Aug 73, pp 1794-1799

Abstract: The investigation was carried out on the structural effects of N,N-dimethylamides of several phosphoric and phosphinic acids in respect to their catalytic activity in the acylation reaction of various arylamines with benzoyl chloride in benzene at 25°. Utilizing correlation analysis it was shown that N,N-dialkylamides of the organophosphorus acids act as oxygen-nucleophilic catalysts, analogously to phosphorus oxides.

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USSR

UDC 541.14

SOKOLENKO, V. A., DADALI, V. A., LITVINENKO, L. M., Academician of the Ukrainian SSR Academy of Sciences, SEMENOV, V. L.

"Effect of Ultraviolet Radiation on the Reaction Rate of the Hydrolysis of Tetraethyl Pyrophosphate Catalyzed by Benzimidazole"

Moscow, Doklady Akademii nauk SSSR, Vol 208, No 6, 1973, pp 1398-1400

Abstract: A significant increase (by 15 orders) in the basicity of benzimidazole in the case of electron excitation and a noticeable increase in the model reaction rate of the hydrolysis of tetraethyl pyrophosphate catalyzed by benzimidazole during ultraviolet radiation were discovered previously [L. M. Litvinenko, et al., DAN, Vol 204, No 5, 1972]. A further study has now been made of the effect of the electron excitation of benzimidazole molecules on the rate of the tetraethyl pyrophosphate hydrolysis reaction. The proportion of excited molecules participating in the catalysis was determined, and the dependence of the reaction rate on their concentration was investigated.

The significant increase in catalytic activity of the benzimidazole molecules on excitation of them and also the significant changes in the acid-base properties of the excited molecules of a number of compounds entering into the composition of proteins [B. V. Donckt, Progr. Reakt.

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SOKOLENKO, V. A., et al., Doklady Akademii nauk SSSR, Vol 208, No 6, 1973, pp 1398-1400

Kinet, No 5, 273, 1970] lead to the assumption that analogous processes can have a defined effect also in encymatic catalysis. It is possible that the catalytic activity of enzymes can in a number of cases arise from the functional protein groups excited during the enzyme-substrate interactions. The possible nucleophilic mechanism of catalysis of the excited molecule by the catalyst is proposed as was used previously [F. Cramer, et al., Ber., No 94, 1634, 1961] to explain the catalytic effect of imidazol in the base state.

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USSR UDC 547.541.6:541.127

LITVINENKO, L. M., PARANOVSKIY, L. A., and SAVELOVA, V. A., Donetsk Branch of the Institute of Physical Chemistry Imeni L. V. Pisarzhevskiy, Acad. Sc. UkrSSR, Donetsk State University

"Kinetics of the Phosphorylation of Aromatic Amines With Dialkyl Chlorophosphates"

Kiev, Ukrainskiy Khimicheskiy Zhurnal, Vol 38, No 2, Feb 72, pp 165-169

Abstract: Reaction kinetics of aniline with dimethylchlorophosphate in nitrobenzene solutions are reported. The rate of the phosphorylation was determined by potentiometric determination of the unreacted amine with sodium nitrite in hydrochloric acid solution. After a short induction period, which varied depending on the concentrations of starting materials, the reaction appears to reach a steady state. It was shown that, depending on the reaction conditions -- concentration of the reagents, temperature -- the main process of aniline acylation with dimethyl chlorophosphate is complicated by a side reaction of N-alkylation of the aromatic amine. By keeping the concentrations of the reagents in the range 0.01-1 M/l and the temperature at 25°C, it was possible to eliminate entirely the N-alkylation side reaction.

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USSR

UDC 541.127.128:547.241

LITVINENKO, L. M., TITSKIY, G. D., and STEPKO, O. P., Donetsk Branch of the Physical-Organic Chemistry of the Institute of Physical Chemistry imeni L. V. Pisarzhevskiy, Acad. Sc. UkrSSR, Donetsk State University

"Phosphinic Acids as Bifunctional Catalysts in the Formation of Amide Bonds"

Moscow, Doklady Akademii Nauk SSSR, Vol 202, No 5, Feb 72, pp 1127-1130

Abstract: Phosphinic acids may exhibit a bifunctional type of catalytic activity, analogously to carboxylic acids. This possibility was studied on the model of acylation of m-chloroaniline with acetic anhydride in benzene at 25°C. It was shown that in small quantities phosphinic acids substantially accelerated the reaction rate. Monofunctional compounds, such as m-nitrophenol, had no effect on the reaction. Quantitative comparisons have shown that phosphinic acids are as active as the carboxylic acids; their catalytic activity increases with increasing acidity. The catalytic activity of phosphinic acids is based on their ability to form cyclic transition complexes with amines which decompose into the final reaction products -- the amides and carboxylic acids.

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1/2 014 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--MECHANISM OF ARENESULFONAMIDE CATALYSIS OF THE REACTION OF AROMATIC AMINES WITH CARBOXYLIC ACID HALIDES -U-

AUTHOR-(03)-LITVINENKO, L.M., SAVELOVA, V.A., SKRIPKA, A.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 886-94

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SULFONAMIDE, CATALYST ACTIVITY, AROMATIC AMINE, CARBOXYLIC ACID, HALOGENATED ORGANIC COMPOUND, CHLORINATED AROMATIC COMPOUND, ANILINE, BENZOYL CHLORIDE, CHEMICAL KINETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1512 STEP NO--UR/0079/70/040/004/0886/0894

CIRC ACCESSION NO--AP0135173

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0135173
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC DATA WERE TABULATED FOR ACYLATION OF M,CLC SUB6 H SUB4 NH SUB2 WITH BZCL AND AC SUB2 O, AND OF P,MEOC SUB6 H SUB4 NH SUB2 BY BZF, IN C SUB6 H SUB6 IN THE PRESENCE OF RC SUB6 H SUB4 SO SUB2 NR SUB2. THE UNSUBSTITUTED SULFONAMIDES OR THOSE WITH A SINGLE ALIPHATIC OR AROMATIC SUBSTITUTENT AT THE N ATOM ARE EFFECTIVE CATALYSTS FOR THE REACTION, THOSE WITH 2 ALIPHATIC SUBSTITUTENTS ARE BUT FEEBLY ACTIVE, AND THOSE WITH 1 ALIPHATIC AND 1 AROMATIC SUBSTITUENT ARE TOTALLY INEFFECTIVE. IN RC SUB6 H SUB4 SO SUB2 NHC SUB6 H SUB4 R A WIDE RANGE OF VARIATIONS OF THE R GROUPS HAD BUT LITTLE EFFECT ON THE CATALYTIC CAPABILITY. RHE RESULTS SUGGEST A BIFUNCTIONAL CATALYSIS BY THE SULFONAMIDES IN THESE CAYLATIONS, PROBABLY VIA FORMATION OF CYCLIC INTERMEDIATES OF TRIMOLECULAR TYPE IWHT THE 2 REACTANTS, IN WHICH THE O ATOM OF THE SO SBU2 AND THE NH GROUP TAKE PART IN A FORM OF HYDROGEN BONDING. FACILITY: DONETS, OTD. FIZ.-ORD. KHIM., INST. FIZ. KHIN. IM. PISARZHEVSKOGO, DONETSK, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--KINETICS OF THE REACTION OF AMINES WITH PHENACYL BROMIDE -U-

AUTHOR-(03)-LITVINENKO, L.M., POPOV, A.F., GELBINA, ZH.F.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2) 356-63

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--REACTION KINETICS, AMINE, BROMINATED ORGANIC COMPOUND, BENZENE DERIVATIVE, STERIC HINDRANCE, TRIETHYLAMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1580 STEP NO--UR/0079/70/040/002/0356/0363

CIRC ACCESSION NO--AP0112574

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0112574

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC DATA WERE REPORTED FOR THE TITLE REACTION AT 25DEGREES IN C SUB6 H SUB6 AND PHNO SUB2. THE REACTIVITY OF THE AMINES VARIES WITH STRUCTURE AND DECREASES WITH INCREASING SHIELDING OF THE N ATOM BY STERIC HINDRANCE FROM THE R GROUPS. THE VARIATION FITS WELL INTO THE SWAIN SCOTT EQUATION (1953). THE SHARP DEPARTURE OF DATA FOR PHNH SUB2 FROM THE RECTILINEAR CORRELATIONAL PLOT OF ALKYLAMINES IS CAUSED BY DIFFERENCES OWING TO SOLVATION OF THIS AMINE IN PROTONATED SOLVENTS USED FOR CALCN. OF NUCLEOPHILICITY AND THE SOLVENTS USED FOR THE TITLE REACTION IN THE PRESENT WORK. IN PASSING FROM C SUB6 H SUB6 TO PHNO SUB2 THE REACTION RATE INCREASED FOR ALL AMINES BY A NEARLY CONST. AMT. AND AGREED WITH SIMILAR CHANGE IN REACTION RATE OF AMINES WITH ALKYL HALIDES. THE AMINES USED WERE PHNH SUB2, MENH SUB2, BUNH SUB2, ET SUB2 NH, AND PIPERIDINE.

UNCLASSIFIED

USSR

Circuit Theory

UDC 621.396.677

LITVINENKO, L. N., OBLYVACH, S. A.

"Diffraction of an Electromagnetic Wave on an Array of Complex Shape"

Radiotekhnika. Resp. mezhved. temat. nauch.-tekhn. sb. (Radio Engineering. Republic Interdepartmental Thematic Scientific and Technical Collection), 1972, vyp. 20, pp 71-79 (from RZh-Radiotekhnika, No 6, Jun 72, Abstract No 6B36)

Translation: A study was made of an indeally conducting periodic array of metal bars with an I-type transverse cross section. A method of solving the the problem of diffraction of a plane electromagnetic wave on such an array is presented. This method is a combination of the reexpansion and Rieman-Hilbert methods. The diffraction field is defined by the only nonzero lati-tudinal component of the magnetic field. Infinite systems of linear algebraic equations are obtained. The suitability of the solution of the equations for finding the amplitudes of the diffraction spectra for a sufficiently broad range of the ratio of the array period to the wavelength is demonstrated. There is 1 illustration and a 3-entry bibliography.

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USSR

UDC: 535.411.01

KAZANSKIY, V. B., LITVINENKO, L. N., and PROSVIRNIN, S. L.

"Theory of the Fabry-Pérot Interferometer With Mirrors in the Form of Flat Grids for an Inclined Incident Wave"

Leningrad, Optika i Spektroskopiya, vol 32, No 3, 1972, pp 592-600

Abstract: This article considers the characteristics of the Fabry-Pérot interferometer with mirrors made up of plane ribbon grids, where the incident wave is inclined and is a planar electromagnetic wave of two polarizations, with the E and H vectors parallel to the grid ribbons. The considerations of the authors are based on a rigorous solution of the diffraction problem, which makes possible the determination of the utilization area and the estimation of the error of the approximation formulas. Analysis of the problem -- made for the single-wave case, when the higher diffraction harmonics of the fields at the ribbons drop off exponentially with the distance from the mirror plane -- permitted discovery of very narrow-wave passage interference maxima with changes in the incidence angle. This important characteristic can be successfully used in metrological practice. An explicit dependence of the resolving power on structural parameters is found which permits construction of the interferometer with two grids having the characteristics necessary for this application.

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USSR

UDC 621.372.826

KAZANSKIY, V. B., LITVINENKO, L. N., SHESTOPALOV, V. P.

"Equivalent Dielectric Properties of an Infinite Two-Dimensional Periodic Strip Structure"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XIV, No 10, 1971, pp 1554-1569

Abstract: In connection with using artificial media in the shortwave supra-high frequency band, it has become necessary to study the electrodynamic properties of these dielectric structures under the condition that their characteristic dimensions are comparable to the wavelength. In view of the large volume of calculations required by previous methods of solving this problem, a study was made of the natural operating conditions of unlimited media comprising ideally conducting, regularly arranged metal strips with different directions of electromagnetic wave propagation. The problem is solved without restrictions on the relation between the wavelength and the characteristic dimensions of the structure, but the basic analysis is performed for the single-mode case where the medium can be considered a homogeneous dielectric with an equivalent index of refraction. Either explicit formulas or expressions which are usually subjected to numerical and qualitative analysis are obtained for

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APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002201820002-4"

USSR

KAZANSKIY, V. B., et al., Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XIV, No 10, 1971, pp 1554-1569

the index of refraction of the anisotropic medium. An analysis of the dispersion equations is performed for strip structures with propagation of the electromagnetic waves in various directions. Curves are presented for the region of transparency of the structure during propagation of waves with E-polarization and H-polarization, the dispersion of the effective index of refraction during propagation of H-polarized and E-polarized waves with different values of the filling parameter and the roots of the derived dispersion equations.

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USSR

UDC: 538.574.6

YENA, A. I., LITVINENKO, L. N., and SHESTOPALOV, V. P., Khar'kov Institute of Radioelectronics

"Diffraction of Electromagnetic Waves by Multi-element Arrays"

Gor'kiy, Izvestiya Vysshikh Uchebnykh Zavedeniy: Radiofizika, Vol 13, No 6, 1970, pp 913-924

Abstract: The authors study the diffraction of a plane electromagnetic wave by a multi-element array. The structure of the array consists of an infinite sequence of periodically spaced groups of strips, with n number of strips in each group. It is shown that these arrays have important characteristics with respect to practical application. These characteristics consist of the array's transparency to H-polarized waves in a broad range of frequencies, while being analogous to a single element array with the same period in the case of E-polarization. An approximate method is proposed for calculating array diffraction fields using equivalent boundary conditions. The results of these calculations are compared to a precise solution obtained for a case involving an array with a five element period. Original article: five figures, one table, 19 formulas, and 13 bibliographic entries.

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USSR

UDC: 621.396.677

KAZANSKIY, V. B., KOLCHIGIN, N. N., LITVINENKO, L. N.

"On the Problem of Resonance Properties of Double Strip Gratings"

Radiotekhnika. Resp. mezhved. nauch.-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), vyp. 13, 1970, pp 156-162 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5B5)

Translation: The authors analyze the resonance properties of structures consisting of two layers of flat metal gratings in the case of normal incidence of an electromagnetic wave in which the H vector is parallel to the metal strips. It is shown that such systems with narrow gaps between strips have high-Q properties, and consequently can be used for precision measurement of the wavelength and permittivity of gases. Experimental data are presented which confirm the theoretical conclusions. Five illustrations, bibliography of six titles. Resumé.

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USSR

UDC: 621.372.8:535

LITVINENKO, L. N.

"Diffraction Properties of Specially Shaped Gratings"

Radiotekhnika. Resp. mezhved. nauch.-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 13, pp 60-62 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5B177)

Translation: The paper deals with the use of diffraction gratings in the millimeter and submillimeter bands and considers the characteristics of an asymmetric two-element grating with two strips of different width; a multiple-element grating consisting of periodically arranged groups of strips; double-layer and multilayered gratings. The author discusses problems in the practical utilization of the particular properties of such structures. Bibliography of eight titles. Resumé.

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Acc. Nr: AP0047330 Ref. Code: UR 0300

PRIMARY SOURCE: Ukrayns'kiy Biokhimichnniy Zhurnal, 1970, Vol 42, Nr 1, pp 86-91

PROPERTIES OF MUSCULAR ALDOLASE OF RABBITS UNDER CONDITIONS OF FASTING

L. T. Litvinenko, M. F. Gulyi, M. I. Shevchenko, L. I. Golubeva

Institute of Biochemistry, Academy of Sciences, Ukrainian SSR, Kiev

Summary

The biological properties were studied of the crystalline aldolase isolated from muscles of the rabbits fastened for a long period of time. K_m and maximum rate of the reaction as well as the effect on the enzyme activity of urea taken in low concentrations and of para-chlormercurium-benzonate (*p*-CMB) were determined. It is shown that pH-optima of aldolase from muscles of the normal and fastened animals coincide.

When incubating with fructose-1,6-diphosphate (FDP) in trisacetic buffer two pH-optima (6.3 and 9.1) were found for the both enzymes by the chemical method and one optimum (8.0) by the optical one.

When incubating with fructoso-1-diphosphate (F-1-P) the optima pH (8.5 and 5.6) were determined by the chemical method in the norm and under conditions of fasting.

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AP0047330

Under optimal conditions a decrease of K_m is observed for the both substrates in aldolase of the fastened rabbits. In the presence of FDP an increase in the maximal rate of the aldolase reaction was established in the fastened rabbits, with F-1-P — a decrease.

After preincubation with urea the concentration of which was 0.5—3 M the aldolase activity of the fastened rabbits lowers sharply. The activity of aldolase in norm increases until the concentration of urea taken for preincubation does not exeed 1.5 M.

Fixation of sulphydryl groups by *p*-CMB does not provoke essential differences in the activity of aldolase of the fastened animals in comparison with norm.

The established differences in the biological properties of the muscular aldolase of the rabbits fastened for a long time is result of changes in its primary structure connected with the change in biosynthesis of this enzyme.

19790854

LITVINENKO, M.S.

Coal Chemistry

JPRS 57549 1 Dec 72
Trans. on USSR Ind. Affairs
#215

UDC 338.4:662.741

COMPARATIVE EFFICIENCY OF COKE CHEMICAL PRODUCTION STUDIED

[Article by M. S. Litvinenko, A. M. Akhtyrchenko, [illegible] Institute of Coal Chemistry, [illegible], and [illegible] I. Bondar' (State Institute for Planning Enterprises of Coke Chemical Industry); "The Economic Advisability of Producing Chemical Products in the Coke Chemical Industry"; Moscow, Koks i Khimiya, Russian, No 10, October 1972, pp 51-54]

The [illegible] Plenum of the CPSU Central Committee was a turning point in the development of the chemical wing of the coke chemical industry, as it was for the chemical industry as a whole. Since 1959 a number of government decrees concerning supplying the chemical industry and other sectors of the national economy with raw materials and semi-finished coke chemical products and concerning steps to expand the assortment of chemical products of coking have been published to develop the decisions of this Plenum.

In the period between 1959 and 1970, 98 chemical shops and departments have been built and put into operation at coke chemical enterprises (25 to catch chemical products of coking, 14 to remove hydrogen sulfide from coke gas and to produce sulfuric acid, 15 to remove phenol from effluents, eight to process coal tar, five to process crude benzene, five to produce naphthalene, nine to coke pitch, two to produce polymer resins, and 15 others).

A characteristic feature of the development of chemical production facilities of the coke chemical industry during this time was the increasingly comprehensive processing of raw material, leading to an increase in the assortment of chemical products of coking and to obtaining higher quality products.

Whereas during 1959-1965 about 65 percent of the units introduced were shops to catch the chemical products

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002201820002-4"

UDC 621.317.08

USSR

MISYURA, V. A., PIVEN', L. A., LITVINENKO, O. A., SOMOV, V. G., NABOKA, A. M., SURKOV, A. K., and KARATEYEV, N. G.

"Mobile Radio Ionosphere Complex for Investigating the Ionosphere and Radio Wave Propagation"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 3 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 3--collection of works) "Nauka," 1972, pp 104-108 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A427)

Translation: A mobile radio ionosphere complex, developed in the Khar'kov University for complex investigations of the ionosphere and the propagation of radio waves by the method of vertical probing and the method of single-frequency and multifrequency differential Doppler and Faraday effects in satellite and rocket signals, is described. The mobility of the complex permits, in addition to conducting independent measurements, combination measurements with devices for noncoherent scattering and with experiments using geophysical and meteorological rockets, as well as various shortwave ranges and the like. Resume

1/1

USSR UDC 621.317.77

MISYURA, V. A., PIVEN', L. A., SURKOV, A. K., SOMOV, V. G., KARATEYEV, N. G., ZAGVOZDKIN, B. V., NABOKA, A. M., LITVINENKO, O. A., and KAPANIN, I. I.

"Systems of Phase and Doppler Measurements in a Mobile Radio Ionosphere Complex"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 3 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 3--collection of works) "Nauka," 1972, pp 109-113 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A426)

Translation: A device for phase probing and a system for recording the Faraday and Doppler effects in artificial earth satellite signals and rockets, including a series of multichannel receiver and recorder devices operating at two, three, and four coherent frequencies (20, 40; 24, 48, 144; 20, 30, 90, 180; 150 and 400 MHz, and others), are described. The difference between the phase probing system and those now known is the separation of the measured phase differences with a heterodyne frequency and consequent narrow-band filtration. Resume

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UNCLASSIFIED PROCESSING DATE--02OCT70

1/2 012

TITLE--A MANUAL ON PULSE TECHNOLOGY -U-

AUTHOR-(05)-YAKOVLEV, V.N., VOSKRESENSKIY, V.V., GENIS, A.A., DOBRONKIN, YE.F., LITVINENKO, O.N.

COUNTRY OF INFO--USSR

SOURCE--A MANUAL ON PULSE TECHNOLOGY (SPRAVOCHNIK PO IMPUL'SNOY TEKHNIKE) KIEV, TEKHNIKA, 1970, 654 PP

DATE PUBLISHED-------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., NAVIGATION

TOPIC TAGS--ELECTROMAGNETIC PULSE, PULSE AMPLIFIER, MULTIVIBRATOR, BLOCKING OSCILLATOR, PULSE GENERATOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/0567 STEP NO--UR/0000/70/000/000/0001/0654

CIRC ACCESSION NO--AM0110365

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--02OCT70

2/2 012

CIRC ACCESSION NO--AM0110365

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE 5. CHAPTER I LINEAR CIRCUITS 7. II FORMING LINES 71. III THE CORRELATION METHOD OF INVESTIGATION OF TRANSITION PROCESSES IN LINEAR SYSTEMS 133. IV WIDE BAND AMPLIFIERS AND PULSE AMPLIFIERS 151. V MULTIVIBRATORS WITH A BASIC MASTER TIME CIRCUIT 181. VI MULTIVIBRATORS WITH EMITTER MASTER TIME CIRCUITS 204. VII TRANSISTOR TRIGGERS 217. VIII TRANSISTOR BLOCKING GENERATORS 229. IX TUBE MULTIVIBRATORS 248. X TUBE TRIGGERS 299. XI TUBE BLOCKING GENERATORS 314. XII CONTROLLED GENERATORS OF SAWTOOTH VOLTAGE 344. XIII AUTOGENERATORS OF SAWTOOTH VOLTAGE 393. XIV GENERATORS OF SAWTOOTH CURRENT 447. XV PULSE GENERATORS WITH BRIDGE MASTER CIRCUITS 473. XVI PULSE FREQUENCY DIVIDERS 491. XVII PULSE GENERATORS WITH A QUARTZ STABILIZATION OF THE FREQUENCY OF VIBRATIONS 525. XVIII PULSE GENERATORS WITH LAGGING REVERSE CONNECTION 539. XIX PULSE CIRCUITS ON TUNNEL DIODES 556. XX PULSE CIRCUITS ON GAS DISCHARGE INSTRUMENTS 595. LITERATURE 637. IN A COMPACT FORM YET FULLY ARE GIVEN THE THEORETICAL BASES FOR THE PULSE TECHNOLOGY; EXPLAINED IS THE PHYSICAL ASPECT OF THE PHENOMENA; CITED ARE MANY CALCULATING FORMULAE NECESSARY IN DESIGNING BASIC PULSE CIRCUITS AND DEVICES AND ALSO EXAMPLES OF THEIR CALCULATION. A GREAT DEAL OF ATTENTION IS GIVEN TO METHODS AND DIAGRAMS OF STABILIZATION OF TEMPORARY PARAMETERS OF THE GENERATED IMPULSES. THE MANUAL IS FOR ENGINEERS AND TECHNOLOGISTS DESIGNING ELECTRO AND RADIOTECHNICAL EQUIPMENT FOR WIDE USE.

UNCLASSIFIED

USSR

NEKOVALEVA, N. A., Candidate of Medical Sciences, RAKHMATULLAYEV, A. R., and LITVINENKO, T. G., Chair of Roentgenology and Radiology, Chair of Hospital Surgery, and TsNIIL, Rostov Medical Institute, and Uzbek Scientific Research Institute of Hematology and Blood Transfusion

"Histochemical Studies of Alkaline Phosphatase and Glycogen in Leukocytes during Acute Experimental Radiation Sickness"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1970, pp 68-70

Abstract: Shifts in alkaline phosphatase and glycogen concentration in leukocytes were studied during radiation sickness. A total of nineteen rabbits were irradiated with 1000 r. After twenty-four hours, ten of them received bone marrow transplants from donor rabbits. The remaining nine rabbits received no transplants and were controls. Blood smears were stained by the Shabadash method to determine glycogen and by the Petrov and Zaretska method to determine alkaline phosphatase. Five control rabbits died within 27 days (on the average), and the other four survived. The number of leukocytes with decreased content of glycogen fell from 8.9%

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NEKOVALEVA, N. A., et al., Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1970, pp 68-70

in controls to 38% on the 7th day after irradiation, returned to normal on the 20th day, and rose again to 36% on the 30-60th day. Glycogen concentration per mm^3 of blood decreased three-fold on the 7th day. An increased number of destroyed leukocytes was observed only on the 30-60th day. The number of leukocytes with increased phosphatase concentration rose five times on the 15th-30th day. The average phosphatase concentration in leukocytes increased from 140 in controls to 191 on the 30th day. Phosphatase concentration per mm^3 of blood decreased from 11.9 in controls to 4.5 on the 15th day. In the experimental group of ten animals, four rabbits died within 50 days (on the average). The number of leukocytes with decreased glycogen concentration was 6.3% in controls, remained unchanged on the 7th day after irradiation, rose to 19.6% on the 15th day, and stayed at this level until the 30th day. The average glycogen concentration in leukocytes increased from 179 in controls to 208 on the 15th day and 210 on the 30th day. Glycogen concentration per mm^3 of blood decreased from 13.0 in controls to 8.5 on the 7th day, slightly increased to 9 on the 15th day, and reached 12.2 on the 30th day. This was accompanied by a corresponding drop

USSR

NEKOVALEVA, N. A., et al., Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1970, pp 68-70

in leukocyte count. The findings indicate that marrow transplants diminish fluctuations in leukocyte glycogen concentration during radiation sickness. The number of leukocytes with increased phosphatase concentration rose from 10% in controls to 32% on the 15th and 65% on the 20th day. The average phosphatase concentration in leukocytes increased two-fold on the 20th day. Total phosphatase activity rose from 12 in the controls to 17, despite the reduced leukocyte count. The increased phosphatase activity during radiation sickness in animals with bone marrow transplants may be regarded as an intensification of oxidative and restorative processes in the body.

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1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--CATALYTIC ACTIVITY OF HAFNIUM, IV, IN A HYDROGEN PEROXIDE, THIOSULFATE SYSTEM -U-
AUTHOR--LITVINENKO, V.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(2), 139-42.
DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HAFNIUM COMPOUND, HYDROGEN PEROXIDE, THIOSULFATE, CATALYST ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1506 STEP NO--UR/0153/70/013/002/0139/0142

CIRC ACCESSION NO--AT0130435
UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0130435

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. HF (IV), 4 TIMES 10 PRIME6 M, CATALYZES THE OXIDN. OF 0.001M S SUB2 O SUB3 PRIME2NEGATIVE BY 0.0087 M H SUB2 O SUB2 TO FORM SO SUB4 PRIME2NEGATIVE IN THE PH RANGE 104. THE GREATEST ACTIVITY IS NOTED AT PH 2.1, APPARENTLY DUE TO THE FORMATION OF AN ACTIVE PEROXY COMPLEX OF HF. THE CHARGE OF THE COMPLEX IS PLUS1. CATALYSIS DECREASES WITH INCREASING IONIC STRENGTH IN THE RANGE OF 0.03-0.16, BUT IS NOT OTHERWISE AFFECTED BY THE PRESENCE OF CLCH SUB2 COO PRIMENEGATIVE BUFFER. CATALYSIS IS LINEARLY DEPENDENT ON HF CONCN., AND THIS EFFECT MAY BE USED FOR THE TURBIDIMETRIC DETN. OF HF AT 10 PRIMENEGATIVE7-10 PRIMENEGATIVE6 M. FACILITY: KIEV. POLITEKH. INST., KIEV, USSR.

UNCLASSIFIED

UDC: 681.3

USSR

KASATKIN, V. N., PEREKHOD, I. A., LITVINENKO, V. M., KHRISTIN, I. V., ZDOROVTSEV, A. A.

"Algorithmic Station System, and the Teaching of Programming in Secondary Schools"

V sb. Primeneniye tsifr. vychisl. mashin dlya obuch. programmir. (Use of Digital Computers for the Teaching of Programming--collection of works), Kiev, 1970, pp 25-30 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V779)

[No abstract]

1/1

1/2 008 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--AUTOMATION OF THE PRECIPITATION OF CUPRIC OXYCHLORIDE -U-

AUTHOR--LITVINENKO, V.YA., MAYDANNIK, A.K.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. UKR. 1970, (1) 50-1

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AUTOMATION, OXYGEN COMPOUND, CHLORIDE, COPPER COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1336 STEP NO--UR/0436/70/000/001/0050/0051

CIRC ACCESSION NO--AP0106113
UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106113

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE PRODUCTION OF CU SUB2 OCL SUB2, BASED ON A REACTION BETWEEN CUCL SUB2 AND A DISPERSION OF CHALK, IN A 4 CASCADE PROCESS THE CONCN. OF CUCL SUB2 IS AUTOMATICALLY DETD. WITH A REFRACTOMETER, AND THE REFRACTION ANGLE IS FED TO A COMPUTER FOR CONTROLLING THE AMT. RELEASED INTO THE REACTOR VATS OF CHALK DISPERSION AUTOMATICALLY DETD. BY A RADIOACTIVE D. GAGE.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--EXPERIMENTAL USE OF THE RADIOISOTOPIC FOLLOW UP LEVEL GAGE UDAR-5

-U-

AUTHOR-(03)-STELMASHENKO, O.N., LITVINENKO, V.VA., SHEVCHUK, N.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. UKR. 1970, (1), 54-5

DATE PUBLISHED--------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, METHODS AND EQUIPMENT

TOPIC TAGS--LIQUID LEVEL INSTRUMENT, RADIATION SOURCE, GAMMA RAY ABSORPTION, GAMMA DETECTOR/(U)UDARS LEVEL GAGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1901 STEP NO--UR/0436/70/000/001/0054/0055

CIRC ACCESSION NO--AP0108231

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 017

CIRC ACCESSION NO--AP0108231

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONTINUOUS, AUTOMATIC, CONTACTLESS MEASUREMENT AND CONTROL OF LEVELS IN LIQS. AND FREE FLOWING SOLIDS WITH AN ERROR OF PLUS OR MINUS 2 MM AND WITHOUT RISK OF FIRES AND EXPLOSIONS WAS ACHIEVED BY MEASURING DIFFERENCES IN GAMMA RAY ABSORPTION WITH THE AID OF THE LEVEL GAGE UDAR-5 WHICH HOUSED A LOW ACTIVITY GAMMA RAY SOURCE ON ONE BRANCH AND A RADIATION SENSITIVE ELEMENT ON THE OTHER BRANCH OF A VERTICAL MOVING BELT PERFORATED TO MESH WITH THE TEETH OF A SINGLE SERVO DRIVE SYSTEM.

UNCLASSIFIED

Acc. Nr. AP0049425 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code UR 0129

102849n Economical, alloyed tool steel for hot extrusion. Tursunov, A. V.; Tyurin, N. F.; Zubkov, A. P.; Litvinenko, Yu. P.; Sabaev, V. I. (Donets. Nauch.-Issled. Inst. Chern. Met., Donetsk, USSR). *Metalloved. Term. Obrab. Metal.* 1970, (1), 32–4 (Russ). As a result of earlier lab. studies a new alloyed steel Cr–Mn–Si, further alloyed by a complex W + Mo + V, was proposed as a construction steel and steel for extrusion instruments. In this work the properties were studied of tool steel 4Kh2GSVMF in comparison with 3Kh2V8F steel. Reason for replacing of high-W steel 3Kh2V8F by low-W steel 4Kh2GSVMF is W deficiency. Steel 4Kh2GSVMF contained C 0.35–0.45, Mn 1.2–1.5, Si 1.3–1.6, Cr 2.0–2.5, W 0.2–0.5, Mo 1.1–1.4, and V 0.2–0.5%. Steel 3Kh2V8F contained C 0.30–0.40, Mn 0.20–0.40, Si 0.35, Cr 2.2–2.7, W 7.5–9.0, and V 0.2–0.5%. Steel 4Kh2GSVMF had following crit. points: Ac_1 and Ac_3 = 754 and 805°, Ar_3 and Ar_1 = 704 and 662°. Max. hardness and absence of overheating in microstructure was obsd.

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REEL/FRAME
19801260

18

AP0049425

at 950–1000°. Heat-resistance of 4Kh2GSVMF steel is higher at 600 and 700° than that of std. steel 3Kh2V8F, and somewhat lower at 625 and 650°. Hardenability of 4Kh2GSVMF steel is higher than that of std. steel, esp. after slow cooling in air, or in an oven. Steel 4Kh2GSVMF in comparison with std. steel 3Kh2V8F has higher heat-resistance, plasticity, viscosity, and lower temp. of hardening. Recommended thermal treatment of 4Kh2GSVMF steel is hardening from 970–1000° in oil, tempering at 580–600° to hardness HRC 46-50. Jiri Becvar

pc

H2

19801261

USSR UDC 629.7.036.3:629.7.063.6

AKSENOV, A. F., LITVINOV, A. A., TRIGUB, G. I.

"Types of Friction Surface Wear in Fuel Apparatus"

Sb. Nauch. Tr. Kiev. In-t Inzh. Grazhd. Aviatsii [Collected Scientific Works of Kiev Institute of Civil Aviation Engineering], No 2, 1971, pp 74-75, (Translated from Referativnyy Zhurnal, Aviatsioynnye i Raketnye Dvigateli, No 10, 1972, Abstract No 10.34.39).

Translation: The friction surfaces of fuel apparatus parts of aircraft used in civil aviation are studied. The studies show that, depending on the geometric characteristics and operating conditions of friction couples, the most significant types of wear are: 1) oxidative; 2) by seizing; 3) fatigue cracking. The accompanying wear is abrasive. 3 Figures; 2 Biblio. Refs.

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USSR

UDC 629.7.036.3:662.75

LITVINOV, A. A., TEREKHIN, V. I., NEKIPELOV, YU. G.

"Laboratory Instruments for Studying the Wear Resistance of Construction Steel under the Conditions of Lubrication with Aviation Fuel"

V sb. Kontaktno-gidrodinamich. teoriya smazki i yeye prakt. primeneniye v tekhn (Contact-Hydrodynamic Theory of Lubrication and Its Practical Application in Engineering--collection of works), Kubyshev, 1972, pp 18-19 (from RZh-Aviatsionnyye i raketnyy dvigateli, otdel'nyy vypusk, No 11, Nov 72, Abstract No 11.34.88)

Translation: It is reported that in order to establish causes for the difference in aviation fuels with respect to the antiwear properties and also to study the mechanism of wear in fuel environments, laboratory instruments have been built which simulate the conditions of operation of the working members of fuel system units. The instruments permit studies to be made under a broad range of external conditions (mutual displacement rate, load, temperature). The small amount of fuel required to perform the experiment permits a study to be made of the effect of the chemical composition of the fuel on the antiwear properties. The instruments built and a number of studies which have been made permit the development of measures to increase the service life and operating reliability of aircraft fuel system units.

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1/2 025 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--EFFECT OF ANTIBACTERIAL THERAPY WATER SALT METABOLISM IN PATIENTS WITH PULMONARY TUBERCULOSIS -U-

AUTHOR--LITVINOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 6, PP 54-57

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTIBACTERIAL THERAPY, TUBERCULOSIS, PULMONARY DISEASE, DIURESIS, METABOLISM, WATER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1750 STEP NO--UR/0475/70/000/006/0054/0057

CIRC ACCESSION NO--AP0129118

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0129118
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE WATER SALT METABOLISM HAS BEEN STUDIED IN 32 PATIENTS WITH RECENTLY DETECTED PULMONARY TUBERCULOSIS AND 66 WITH THE SAME DISEASE BUT OF LONG DURATION. THE WATER SALT METABOLISM OF THE FORMER DID NOT SIGNIFICANTLY DIFFER FROM THAT OF HEALTHY PERSONS. IT WAS CHANGED IN PATIENTS WITH A MARKED TUBERCULOUS INTOXICATION AND FOLLOWING THREE MONTHS OF ANTIBACTERIAL TREATMENT IT NORMALIZED. THE LATTER GROUP SHOWED A REDUCED DIURESIS, DECREASE OF URINARY SODIUM AND POTASSIUM EXCRETION, INCREASE OF EXTRACELLULAR FLUID VOLUME. IN PATIENTS RECEIVING INTRAVENOUSLY ANTIBACTERIAL PREPARATIONS THE WATER SALT METABOLISM WAS WITHIN NORMAL LIMITS. FACILITY: KAFEDRA TUBERKULEZA KIYEVSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

USSR

UDC 629.735.33.063.7:539.622:622.75

AKSENOV, A. F., LITVINOV, A. A., KOROLENKO, YU. I., BOHODIN, A. YE., and SHEPEL', A. YA., Kiev Institute of Civil Aviation Engineers

"Role of Physical and Chemical Processes in the Failure of Rolling Friction Surfaces in Low-Molecular Hydrocarbon Media"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 2, 1973, pp 25-29

Abstract: Studies were conducted to test the effect of different jet fuels on rolling friction surfaces using ShKh15 steel as the test material. Fuels used were commercial T-7, deoxygenated, and T-7 + 0.025% (by weight) Akor-1. Special attention was given to determining the effect of molecular oxygen and surface-active substances on wear. Test parameters consisted of a maximum stress of 230 kg/mm^2, n = 850 rpm, and load time equal to 2 x 10^5 cycles; test temperature ranged from 20 to 120°C. Data plotted from test results showed that wear increases steadily using fuel T-7, reaching a maximum around 60°C and then drops rapidly and levels off at 120°C to less than 0.001 mm of wear. Wear was constant for the deoxygenated fuel and T-7 with Akor-1 added, being less than 0.005 mm. It was established that the anti-friction properties of fuels depend on the intensity and nature of occurrence of physical and chemical processes in the friction zone with the mandatory participation of

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USSR

AKSENOV, A. F., et al, Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 2, 1973, pp 25-29

oxygen. The lubricating action of surface-active substances is considerably greater if the metal is coated with an oxide. Minimum wear is observed when oxygen content in the fuel is maximum. 2 figures, 14 bibliographic references.

2/2

USSR

UDC 539.4:624.012

LITVINOV, A. G.

"The Strengthening of Reinforced-Concrete Beams by the Adhesion of Steel Strips and Some Results of Preliminary Tests"

Tr. Novcherkas. Politekhn. In-ta (Works of the Novocherkassk Polytechnic Institute), No 232, 1971, pp 126-132 (from Referativnyy Zhurnal, Mekhanika, No 2, Fbe 72, Abstract No 2V1136 by M. Kh. Leybur)

Translation: Results are presented of the first stage of research, the aim of which consists in obtaining preliminary data, as well as in refinement of the test procedure and equipment for performing operations for the strengthening of reinforced-concrete beams. The series of bendable elements includes reinforced-concrete crosspieces (P-1) with a cross section of 120 x 75 mm, a span length of 100 mm with a working longitudinal reinforcement consisting of two rods 6 mm in diameter, class A-1, and concrete M-150, as well as reinforced-concrete beams (B-1) with a cross section of 100 x 120 mm, a span length of 1200 mm, with a working longitudinal reinforcement consisting of two class A-1 rods 8 mm in diameter and M-200 concrete. The crosspieces and beams were strengthened inthe stressed zone by the adhesion of steel strips with a width of 3-5 mm. The initial precent of the reinforcement of P-1 cross-pieces comprised 0.79%, and that of P-1 beams -- 1%; after the increase the

1/2

USSR UDC 549.21

LITVINOV, A. N., and REPIN, I. I., Institute of Mathematics, Academy of Sciences Ukrainian SSR

"Closeness of Distributions of Two Markovian Sums of Random Variables Without the Condition of Neglecting Limits"

Kiev, Ukrainskiy Matematicheskiy Zhurnal, Vol 23, No 2, 1971, pp 248-253

Abstract: The article considers the two sequences of series of random variables

$$\xi_0^{(n)}, \xi_1^{(n)}, \ldots, \xi_n^{(n)} \quad \text{and} \quad \bar{\xi}_0^{(n)}, \bar{\xi}_1^{(n)}, \ldots, \bar{\xi}_n^{(n)}$$

such that the successive sums in each sequence

USSR

LITVINOV, A. N., and REPIN, I. I., Ukrainskiy Matematicheskiy Zhurnal, Vol 23, No 2, 1971, pp 248-253

convergence of the two Markovian sums of random variables without the condition of neglecting limits. An evaluation of the difference of the distributions of these sums is obtained according to the value of the pseudo-moments. A theorem is also formulated for the case of lattice distribution functions.

2/2

USSR

LITVINOV, A. N., and REPIN, I. I., Ukrainskiy Matematicheskiy Zhurnal, Vol 23, No 2, 1971, pp 248-253

$$\eta_0^{(n)} = \xi_0^{(n)}, \quad \eta_1^{(n)} = \xi_0^{(n)} + \xi_1^{(n)}, \ldots, \quad \eta_n^{(n)} = \sum_{k=0}^{n} \xi_k^{(n)},$$

$$\overline{\eta}_0^{(n)} = \overline{\xi}_0^{(n)}, \quad \overline{\eta}_1^{(n)} = \overline{\xi}_0^{(n)} + \overline{\xi}_1^{(n)}, \ldots, \quad \overline{\eta}_n^{(n)} = \sum_{k=0}^{n} \overline{\xi}_k^{(n)}$$

form Markov chains. Instead of the condition of neglecting limits there is closeness between the corresponding addends in these sums by means of the pseudomoments first considered by V. M. ZOLOTAREV for the sums of independent random variables. A theorem is formulated defining the conditions for

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USSR

UDC 533.9.08

LONGINOV, A.V., LITVINOV, A.P., KITEYEVSKIY, L.KH., NIZHNIK, G.YA., FROLOV, V.A.

"System For Preliminary Ionization Of Gas In Closed Magnetic Traps"

Vestn. Khar'kov. politekhn. in-ta (Bulletin Of Kharkov Polytechnical Institute), 1970, No 50(98), pp 76-79 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1A238)

Translation: A system is described for preliminary ionization of gas in closed magnetic traps. The system includes a high-frequency pulse generator, a modulator, and a number of electron devices for control and monitoring. A special discharger for obtaining a short trailing edge is introduced into the generator. The following are the basic parameters of the system: power in a pulse, up to 500 kw; operating frequency, 100 kHz; pulse duration, to 5 microsec. 4 ill. 4 ref. Summary.

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USSR

UDC: 666.117.9

ARTAMONOVA, M. V., LITVINOV, A. V., MINAKOV, A. G., MINAKOV, V. A., PAVLUSHKIN, N. M., STREKALOV, A. V., Konstantinovskiy "Order of the Red Banner of Labor" Plant "Avtosteklo"

"A Photochromic Glass"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 10, Apr 72, Author's Certificate No 332059, Division C, filed 26 Jan 70, published 14 Mar 72, pp 85-86

Translation: This Author's Certificate introduces: 1. A photochromic glass containing SiO_2, Al_2O_3, B_2O_3, Li_2O, P_2O_5, CaO and Ag. As a distinguishing feature of the patent, the chemical resistance and mechenical strength of the glass are increased by taking the above-mentioned components in the following proportions (in wt.%):

SiO_2	64-81
Al_2O_3	3-21
B_2O_3	0.1-3.8
Li_2O	8-15
P_2O_5	1-4

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ARTAMONOVA, M. V. et al., USSR Author's Certificate No 332059

	CuO	0.01-0.1
	Ag	0.2-0.7
with the addition of	Na_2O	0.5-3.6
and in excess of 100%	F_2	0.8-2
	Cl	0.5-2.5
	Br	0.3-1.2

2. A modification of this glass distinguished by the fact that the following are added (in wt.%):

Bi_2O_3	0.2-3
LnO	0.1-1
PbO	0.01-0.5
CaO	0.5-5
MgO	0.5-5
GeO_2	0.5-6
K_2O	0.5-5.8
Rb_2O	0.5-7.5
MnO	0.01-1.5

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USSR UDC 666.263.2

MIHAKOV, A. G., PAVLOVA, V. N., and LITVINOV, A. V. Candidates of Technical Sciences (Scientific Research Institute of Automation of Glass Industry)

"Aventurine Slag Glass"

Moscow, Steklo i Keramika, No 8, Aug 71, pp 14-16

Abstract: A new variety of low alkali, high-calcium slag glass called aventurine slag glass developed jointly by the Scientific Research Institute of Automation of Glass Industry (NIIAvtosteklo) and the Moscow Institute of Chemical Technology im. D. I. Mendeleyev (MKhTI) is reported. Melting and production of aventurine slag glass at experimental installation showed that this glass has satisfactory qualities and high physical properties. It can be produced by continuous method or in the form of plates with flame polished surface by casting into a mold. It has pronounced decorative properties and can be widely used in building industry as covering material. Raw materials, melting temperature, external appearance, structural characteristic of synthesized glass as well as possibilities of its use are listed. This glass differs from existing aventurine glasses by a low alkali (up to 6.5% in weight) content and by the absence of such expensive components as P_2O_5 and PbO.

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Acc. Nr.: AP0046770 Ref. Code: UR0115

USSR UDC 681.2.002.3

MINAKOV, A. G., ZOLOTAREVA, R. S., MIN'KO, N. I., ORLOVA, VE. S., LETYAGOV, A. V., and GURILOVSKIY, A. A.

"Introduction of Pyroceramics in the Instrument-Making Industry"

Moscow, Izmeritel'naya Tekhnika (Measurement Technology), No 1, 1970, p 107

Translation: At the Scientific Research Institute of Auto Glass, transparent and semi-transparent pyroceramics were synthesized, replacing the jewels used in the instrument-making industry. Information was presented on the course of tests and adoption of the pyroceramics. (1 table)

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UDC: 621.378.32

SHCHERBOV, V. A. and LITVINOV, D. D.

"Matching Beamguide Loads"

Kiev, Izvestiya VUZ SSSR--Radioelektronika, No 9, 1972, pp 1175-1178

Abstract: A matching transformer to be used between millimeter and submillimeter wavelength devices is described in this article. The transformer, free for the most part of the deficiencies of known matching transformers, is shown in simplified form and its construction explained. Results of the experimental investigation of its parameters are presented, and recommendations are made for further improvements. The distinctive feature of the transformer is a structure made up of two rotatable conducting grids. Graphs are plotted for the coefficient of reflection at the transformer input as a function of the angle of rotation of the grids and as a function of the frequency change of the uhf signal; there are also plots of the transformer losses as a function of the coefficient of reflection of the matched load and of the ratio of the reflected and transmitted signal components as a function of the grids' rotational angle. The experiments from which this data was obtained

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USSR

UDC: 621.378.32

SHCHERBOV, V. A., et al, Izvestiya VUZ SSSR--Radioelektronika, No 9, 1972, pp 1175-1178

were conducted for signals of 1.53 and 1.73 mm wavelengths.

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LITVINOV, L. D.

JPRS 54811

29 December 1971

GAS CHROMATOGRAPHY IN BIOLOGY AND MEDICINE

Gas Chromatography

Complete translation of book by L. D. Litvinov and B. A. Rudenko; "Gazovaya khromatografiya v biologii i meditsine"; Meditsina Press; Moscow, Russian, 1971, signed to press 16 February 1971, 224 pages.

CONTENTS

USSR

UDC 613.74(-214)

LITVINOV, N. N. and MARKOSYAN, T. M., Institute of General and Communal Hygiene imeni A. N. Sysin, Academy of Medical Sciences USSR, Moscow

"Hygienic Aspects Relating to the Organization of Mass Out-of-Town Recreation for the Population of Large Cities"

Moscow, Gigiyena i Sanitariya, No 12, 1972, pp 42-45

Abstract: In recognition of the importance of rest and recreation for urban workers, the government has built numerous sanatoria, rest homes, tourist facilities, camps, etc. However, comparatively little planning has been done with regard to their distribution, access, avoidance of crowding, relation to one another, and provision of water, heat, sewage, and arrangements for garbage removal. Not much attention has been paid to individual needs and desires, to the differences between the requirements for active and passive rest and for weekend outings versus long vacations. Other matters calling for thorough study include travel to recreation areas and the problem of "transport fatigue," the needs of people living in different climatic zones at different times of the year and in cities of different sizes, and setting of hygienic standards for recreational facilities in terms of their capacity and ground area required.

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USSR

UDC 628.19:[615.451.3+615.285.7:632.95]:
612.014.46

LITVINOV, N. N., and NIKONOVA, A. G., Institute of General and Communal Hygiene imeni A. N. Sysin, Academy of Medical Sciences USSR

"The Effects of Alkyl Sulfate on Resorption of Pesticides and Pesticide Concentration in the Organs of Experimental Animals"

Moscow, Gigiyena i Sanitariya, No 9, 1971, pp 21-25

Abstract: Rats were given single intragastric doses of C^{14}-tagged organochlorine pesticides (3.7 mg of Lindane or 8 mg of DDT) and 0.0125 mg of alkyl sulfate detergent (test groups) or the pesticides only (control group). The animals were sacrificed 1, 2, 4, 24, or 48 hours later, and the concentration of the radioactive isotope in the various organs was measured. In test groups, pesticides were absorbed into the blood and deposited in the internal organs much faster than in controls, yielding a correspondingly higher C^{14} concentration in the tissues during the initial hours. Elimination of the pesticides from the body was also accelerated by the presence of alkyl sulfate, especially the elimination of DDT from kidneys and elimination of DDT and Lindane from the liver, brain, and fatty tissue. Since very small doses of alkyl sulfate greatly accelerate the excretion rate of organochlorine pesticides, toxicological significance of the findings should be examined.
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LITVINOV, N. N.

JPRS 65320
7 May 76
USSR: 614.7E

HYGIENIC PREREQUISITES FOR CONTROLLING LARGE CITY GROWTH

[Article by N.N. Litvinov, L.S. Kir'yanova; Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 1, 1972, pp 30-35]

One of the typical manifestations of urbanization is the rapid growth of large cities which overtakes the growth rate of other urban settlements (Table 1).

Most large and megalopolitan ["giant"] cities are concentrated in China, USA, GDR, FRG, India, and Japan (Table 2). According to the data of the UN Expert Commission, there is an annual increment of 4 percent in the population of cities with more than one million inhabitants, and in a number of South American, Asian, and African countries it is 8 percent. The increase in population of such cities (30-70% of the total increment) occurs mainly due to migration of rural population because of the absence or shortage of agricultural work and the desire to obtain better paid or guaranteed work. The desire for the conveniences or cultural advances of city life plays a considerable part in such migration from rural areas, but many of the new arrivals settle in slum regions poorly adapted for housing or not at all suitable for this purpose. It is precisely in the large and megalopolitan cities of capitalistic countries that there is sharp exacerbation of class and race distinctions, rise in overall and juvenile crime rate, high incidence of suicides, drug addiction, and alcoholism.

According to the All-Union census (1970), in the USSR there are 33 megalopolitan cities and nine of them have a population of more than one million. Thus, the Soviet Union is in first place in the world, with respect to number of large and megalopolitan cities, even though it is sixth (after Brazil) in concentration of population in large cities. In the USSR, large cities are undergoing the fastest growth, whereas megalopolises have shown stabilization of the increase in population in the last ten years: in Moscow and Leningrad there has been a considerable decline in population (Table 3), and this is definitely related to the systematic tactics with respect to limiting the growth of megalopolises.

There are several typical urban development features in large and megalopolitan cities. The following are among the distinctions in the planning